

Please check course website for updates.

Last updated: 01/14/20

1. Please obtain a (free) nanoHUB account ASAP,
if you do not already have one.

2. *Once you have logged into your nanoHUB account
you should be able to access the course website by going to*
<https://nanohub.org/courses/ECE659/sp2017/outline>

**** Only *Grades* will be conveyed through *Blackboard Learn* ****

*Syllabus, textbook, videotaped course lectures,
quizzes and practice exams are available at the **course website***

***If you have any difficulty accessing the course website,
please contact me right away by email***

Course objective: To convey key concepts of nanoelectronics and quantum transport.

Prerequisites: Linear algebra, Elementary differential equations.

Instructor: Supriyo Datta, email: datta@purdue.edu, **Ph: 765-414-5633**

Office hours: Questions by email are strongly encouraged.
Please send email if you need to see me in person.

Please watch this video .. it provides an overall perspective on our approach:

<https://www.youtube.com/watch?v=Nilx8sfmEMo>

Grading Policy

NO cumulative final exam, all five exams weighted equally for final grade:

A: 85% and above, A minus: 80-85, B plus: 75-80, B: 70-75

If you receive less than 75% on any of Exams 1-4, I encourage you to talk to me personally before the next exam. If you can explain the exam to me and convince me that you have grasped all the concepts involved, you can receive up to 75% for the exam. This does not apply to Exam 5.

*Syllabus, textbook, videotaped course lectures,
quizzes and practice exams are available at the **course website***

**** In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control.**

In such an event, information will be provided through email or Blackboard

<https://nanohub.org/courses/ECE659/sp2017/outline>

Only **Grades** will be conveyed through **Blackboard Learn**

SYLLABUS

Exam 1 (1/31/20): Semiclassical Transport	LNE Ch. 1-4, 6-10 FON1: L1.1-1.10, 2.1-2.10, 3.1-3.10
Exam 2 (2/14/20): Schrodinger equation	LNE Ch. 18 QTAT Ch.5 FON2: L1.1-1.10
Exam 3 (3/13/20): Contact-ing Schrodinger	LNE Ch.19-21 QTAT Ch.10 FON2: L2.1-2.10, 3.1-3.10
Exam 4 (4/10/20): Spin Transport	LNE Ch.12, 22 FON2: L4.1-1.10
Exam 5 (5/4/20): Entropy, Fock Space	LNE Ch.15-16, 23, 24 FON1: L4.1-4.10

LNE is the text: S.Datta, "Lessons from Nanoelectronics," World Scientific, **Second Edition** 2017. Manuscript version available on course website for free download.

QTAT is a reference "Quantum Transport: Atom to Transistor," Cambridge, 2005.
Manuscript of relevant chapters posted on course website as additional references.

Online lectures are from the two online courses:

FON1: <https://nanohub.org/courses/fon1>

FON2: <https://nanohub.org/courses/fon2>

**** In the event of a major campus emergency, course requirements, deadlines and grading percentages are subject to changes that may be necessitated by a revised semester calendar or other circumstances beyond the instructor's control.**

In such an event, information will be provided through email or Blackboard